

Application No. 10/695,408
Amendment with RCE
Reply to Office Action of January 17, 2006

REMARKS/ARGUMENTS

In an Office Action dated January 17, 2006 claims 1-3, 10-12, 19-21, and 28-30 were rejected under § 102 based on Yamamoto and claims 4-9, 13-18, 22-27 and 31-36 were rejected under § 103 over Yamamoto and Sexton and Bridge. Applicants respectfully traverse the rejections and request consideration of the following arguments.

Claim Amendments

Independent claims 1, 10, 19 and 28 have been amended in several areas. First, they have been amended to make it explicit that data migration means migrating data between first and second storage units, it being understood that storage units can be physical storage systems or LUNs (logical units) on physical storage systems. Second, the claims have been amended to interactively perform data migration rather than just interactively supporting data migration. The third change is to change focus from a detailed architecture using port processors to placement of the storage processing device as part of a switched fabric with the data migration thus being performed as a fabric application, with it specifically being claimed that the storage processing device operates whether the storage units are directly connected to the storage processing device or are coupled through a switch, to emphasize this fabric-centric nature.

§ 102 Rejections

Claim 1

Applicants have amended claim 1 to clarify that data migration, as claimed, means, and meant, migrating data from a first storage unit to a second storage unit. Applicants further submit that the Patent Office interpreted the phrase as such when issuing the § 103 rejections based on the references cited. There is no discussion in Yamamoto of data migration as claimed. Thus a fundamental requirement is missing.

With Yamamoto not having any teaching of data migration, it also cannot have an input/output module or control module as required by claim 1. The claim requires that the input/output module and the control module interactively perform data migration.

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The terminal interface 43 of Yamamoto simply allows access by a remote terminal to allow configuration of the Yamamoto unit. Even if having a mere terminal interface could be considered a control module, which Applicants dispute, the mere configuration capability does not begin to reach the claim requirement of performing data migration. Further, the various interface adapters 26 – 32 of Yamamoto do not interact with the terminal interface to perform data migration. Thus they cannot meet the requirements of being the input/output module as required in the claim.

Further, there is no suggestion in Yamamoto that it can be used in a switched fabric with storage units coupled to the switched fabric. Yamamoto is a dedicated unit designed to be directly connected to a host computer and to SCSI disk drives.

Applicants thus submit that numerous elements of claim 1 are not shown in Yamamoto when the claim and Yamamoto are fully considered.

Claim 2

The Office Action references paragraphs 29 and 43 of Yamamoto with respect to claim 2. Applicants traverse this rejection. Applicants admit that paragraph 29 does suggest having tables to convert between files on a file system and logical volumes to perform the file system to logical volume mapping. Applicants also acknowledge that the terminal interface 43 is used to define the logical volume to physical address conversions. However, Applicants note that the logical volume to physical address conversion is done in the drive interface adapter 46 and is completely independent from the file system to logical volume mapping referenced in paragraph 29. Thus the two items cited by the Office Action do not relate to each other and thus cannot both correspond to the elements of claim 2.

Further, even the areas cited in the Office Action are not appropriate when the requirement that the table is for data migration is considered, as none of the tables in Yamamoto are for data migration.

Therefore claim 2 is further allowable over Yamamoto.

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Claim 3

The Office Action references paragraph 39 with respect to claim 3. Applicants submit that Yamamoto, including paragraph 39, do not teach or suggest claim 3 as Yamamoto has no discussion of data migration so that the table information of claim 3, which is required to be information related to data migration, is not taught or suggested. Applicants further note that paragraph 39 of Yamamoto requires the host systems to delay operations, not the processors in the storage processing device as required in claim 3.

Therefore Applicants submit that claim 3 is allowable.

Claims 10 and 19

Applicants had noted that the prior Office Action had not identified any item correlating to the "at least one switch for coupling to the at least one host and the at least one storage device" required in both claims. The current Office Action references the bus structure 16 of Yamamoto as being the required switch. Applicants respectfully traverse this correlation. Even taking the overly broad definition of switch proffered in the Office Action, namely "a device or programming technique for making a selection," the bus structure 16 clearly cannot properly be equated to the switch required by the claims. A bus alone cannot be a switch. The Office Action acknowledges this as well by citing the connecting facility 40, not the buses 36A or 36B, as the switch coupling the port processors. Yet for the switch coupling the host, storage devices and storage processing device, the Office Action just asserts a bus alone. Applicants submit this correlation is improper and must be withdrawn. Therefore claims 10 and 19 are allowable for these further reasons.

Claims 10-12, 19-21 and 28-30

The arguments above with respect to claims 1 – 3 apply to their corresponding claims in claims 10-12, 19-21 and 28-30, thus rendering those claims allowable.

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§ 103 Rejections

Combination of Yamamoto and Sexton

Applicants submit that the combination of Yamamoto and Sexton is improper and based solely on improper hindsight. Yamamoto describes operations inside a storage controller and has no teachings or suggestions of data migration. Sexton operates, as best understood, entirely on a host computer. There is absolutely no suggestion in either reference to move the operations of Sexton, which are described in the environment of a database system, into the storage controller of Yamamoto. The mere statement in the Office Action of both being in the field of storage management is not the teaching or suggestion required to properly form a combination. Thus Applicants submit that the combination is only based on improper hindsight and must be withdrawn. Applicants also note that neither Yamamoto nor Sexton teach or suggest performing the data migration as part of a fabric, even further distancing the relevance of the references. Applicants submit that all of the claims rejected under § 103 are allowable.

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CONCLUSION

Based on the above remarks Applicants respectfully submit that all of the present claims are allowable. Reconsideration is respectfully requested.

Respectfully submitted,

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Date

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